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| APPLICATION NO.                | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------|-------------|----------------------|---------------------|------------------|
| 10/550,540                     | 09/26/2005  | Yuji Mizukami        | Q89566              | 5407             |
| 23373 7590 07/17/2008          |             |                      |                     |                  |
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| EXAMINER                       |             |                      |                     |                  |
| RAO, SHEELA S                  |             |                      |                     |                  |
| ART UNIT                       |             | PAPER NUMBER         |                     |                  |
| 2128                           |             |                      |                     |                  |
| MAIL DATE                      |             | DELIVERY MODE        |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/550,540

**Applicant(s)**

MIZUKAMI ET AL.

**Examiner**

SHEELA RAO

**Art Unit**

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-40 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 13-40 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 26 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SF-08)  
Paper No(s)/Mail Date 9/26/05/5/2/08  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This Office action is in response to papers filed on 26 September 2005.
2. Claims 13-40 are pending and presented for examination. The Preliminary amendment filed on September 26, 2005 cancels claims 1-12.
3. Applicant's submission of references on form PTO-1449, filed on September 26, 2005 and May 2, 2008, have been considered. The foreign patent documents have only been considered to the extent of the description given in the translated Abstracts. A signed copy of each form is attached.

***Specification***

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The claimed limitations are not clearly described or defined in the instant disclosure so as to provide sufficient antecedence. For example, the following elements in claims 13, 23, 27, and 37 are not fully disclosed or defined, the "feeding spindle direction", difference in the feed rates, the acceleration time, among others. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 13, 23, 27 and 37:

Numerous variables are stated for use in the calculating process to carry out a method for performing a threading operation. However many elements are left undefined and ambiguous. The rotational acceleration of the spindle is nowhere defined or disclosed; the use of this variable in the calculations is stated but without a defined acceleration rate, the calculations would seem ineffective. What is the acceleration in the direction along the axis of the spindle is left unanswered. Previous feed rates are claimed but the acceleration from one rotational speed to another is not defined. The "current" feed rate can not be calculated without the previous rate being known. As is known to one of ordinary skill, if the spindle is accelerating, the cutter or another tool must also accelerate in a compensating manner.

- Specific to claims 23 and 37, how the "step of outputting" and "step of altering" is to be carried through is not clearly understood. The claims are directed to a method and system, respectively, but where is the information to be output and how is it to be altered are vague and indefinite.
- The limitations of claims 14-22, 24-26, 28-36, and 38-40 are rejected for the same reasons as aforementioned with regard to the independent claims as they depend therefrom.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 13-40 are rejected under 35 U.S.C. 103(a) as obvious over US Patent No. US 6,847,857 B2 to Sugie.

Due to the lack of sufficient correspondence, the use and purpose of the claimed limitations of these claims is not clear and definite. When the dependent claims are read in light of the independent claims, the Examiner cannot determine the metes and bounds of the claim language. Hence, the prior art of reference is applied to the instant claims as can best be understood and interpreted.

The prior art of reference by Sugie teaches of a threading machine operation as that of the instant invention.

With regard to the limitations of the instant claims, numerous variables are used in the calculations for achieving control of a threading operation relating to acceleration time, feed rates, phase displacement, rotational signals, and mechanical errors. The independent claims define the control method to altering the threading start timing based on at least a spindle acceleration time constant for the feeding spindle. The subsequent dependent claims introduce further variables used in the calculations for achieving the control methodology.

Sugie teaches a thread machining process that is carried out on the basis of a rotation of the spindle and movement of a feed axis by executing steps for determining a relative phase error of the spindle positions and feed axis during a threading machine operation, and determining a movement quantity of the feed axis on the basis of a spindle position set by error-compensating quantity of the relative phase error. Sugie cites formulas used in the calculating process in columns 3 and 4 and describes the process beginning at line 55 in column 3. It is understood that the calculating methodology used by Sugie may not be specifically the same as that of the instant invention, however, it is well known and would be obvious to one of ordinary skill at the time of the invention to take into account the change in the rotational speed/feed rate of the spindle when programming or calculating the cutter behavior in order to achieve the same thread. Furthermore, the use of the various variables in the calculations for altering the start timing is directly in relation to the direction of acceleration, and includes feed rates and phase displacements, especially when the acceleration is in a longitudinal direction as is taught by the prior art of record.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. US 7,123,984 B2

Tanaka

US Patent No. 5,307,549

Tsutsumi et al.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (571) 272-3751. The examiner can normally be reached Monday - Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah, can be reached on (571) 272-2279. The fax number for the organization where this application or any proceeding papers is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. It should be noted that status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/SHEELA RAO/  
Examiner, Art Unit 2128  
July 13, 2008

/Alexander J Kosowski/  
Primary Examiner, Art Unit 2128